

AN
ENQUIRY
INTO THE
Origin, Nature and Cure
OF THE
SMALL-POX.

To which is added,

A PREFATORY ADDRESS to Dr.
MEAD, concerning the present
Discipline in the general Admini-
stration of PHYSIC in this
Kingdom.

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FREDERICK Prince of WALES.

LONDON:

Printed for A. MILLAR, opposite to *Catharine-Street*
in the *Strand*. MDCCLII.

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T O

Doctor *M E A D.*

S I R,

IT is recorded that three hundred and sixty Statues were erected to *Demetrius Phalereus* by the Athenian Commonwealth. However extravagant this Degree of Adulation may appear, yet the *Physical State* in our Days
B seem

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seem to be no less copious in its Acknowledgments of your Merit, since seldom a medicinal Lucubration is published without a *Dedicatory Trophy* to the Honour of Dr. *Mead* at the Beginning of it.--Thus, Sir, Custom might be pleaded in Excuse of the Liberty taken in prefixing your *Name* to this Address: But, as it contains a Remonstrance against the many dangerous *Abuses in the Practice of Physic*, to whom could it with so much Propriety be applied, as to the *Princeps Medicorum*, whose *Precepts* are become
Maxims,

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Maxims, and whose *Example* +
Law in the present Admini-
stration of Medicine?

A noble Author, in a late excellent Performance, has observed, That *Health* is to the natural, what *Liberty* is to the political Body. And if a regular OEconomy and Discipline in the Administration of a state, as well as in the Dispensation of Physic, are the surest Preservatives of the Public and the Patient, it must be confessed, nothing seems less to have engaged our Attention, than the pro-

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per Means of securing these
invaluab^{le} Bleffings.

Were we to calculate the
Excellency of the present
Practice of Phyfic by the
Number of its Professors, to
what a Degree of Perfection
must we conclude it to be
arriv'd; since not only every
particular Part of the human
Body, but every *particular
Disease* incident to it, has a
Professor who boasts himself
more particularly qualified for
the Cure of it?---Besides the
*regular Body of Doctors, Sur-
geons, and Apothecaries*, how

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is the Medicinal Army reinforced with a Host of *Irregulars*; such as *Male-Mid-Wives*, *Oculists*, *Dentists*, *Auriculists*, *Rupturists*, *Venereralists*, *Nostrumites*, *Balsamites*, with a long et cetera of such infallible Medicafters?--From this formidable Review, who wou'd not be apt to conclude the Inhabitants of this Country *immortal*: nevertheless the weekly Muster-Roll of Mortality too fatally evinces, that *Death is not yet swallowed up in Victory*; and even furnishes some Reason to suspect, that these *Physical Legions*,
B 3 how-

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however maintain'd at so enormous an Expence, to defend us against the *common Enemy*, serve but too often as Auxiliaries to the *King of Terrors*; whose Darts wou'd not perhaps be always so effectual in their Execution, did not they treacherously supply Poison for the Points of them.

When we read of *Æsculapius's* Visit to *Rome* in the Disguise of a Serpent, one wou'd be tempted to imagine the God had favoured us with a like Visitation, tho' with a less

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less salutary Design; for while under that Form he communicated to the *Romans* the healing Balm of his *Divinity*, he seems to have left us little more than the poisonous Properties of the Serpent.

Was the private Centinel to usurp the Province of the General, or the Corn-Cutter that of the Physician, what Success could be expected from the Operations either of War or Medicine? and yet, in the latter Case, every Day's *Experience* furnishes fatal Instances of this Irregularity.

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Who knows not that the Discipline of Physic directs a Physician to *prescribe*, an Apothecary to *prepare*, and a Surgeon to *operate*? But, when once the Operator, or Preparer becomes the *Prescriber*, what Depredations may not be committed on the Life and Fortune of the Patient, not to mention the fatal Effects that must often proceed from a Deficiency in *Judgment*? Will not *Interest* then come in Competition with *Integrity*? and may it not be presum'd, that frequently more Regard will be had to the *Duration* of a Wound,

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a Wound, than the *Cure* of it? May not every bilious or scorbutic Eruption be heightened into the most alarming Symptom, when the pecuniary Advantage arising from a *six Weeks mercurial Discipline* will so amply reward the Mistake of the *chirurgical* Doctor? Will not the Apothecary be induced to make his *Bill* the Barometer of his Patient's *Constitution*; and, in Proportion as the one rises or falls, pronounce it fair or foul Weather with the other? These and such like Abuses it is the Business and Duty of the Physician

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Physician to prevent ; and, did he support the proper Dignity of his Character, he would be the Guardian of his Patient's *Property*, as well as *Person* : No venal Recommendation would induce him to lengthen his Prescription, and make a compleat Dispensary of the sick Man's Chamber, in Point of Gratitude to his *Galenical Benefactor*. He would scorn to prostitute his own Knowledge, by factifying the Want of it in a presumptuous Pretender, and to screen an Homicide from the Family, with the modern Phrase
of

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of *The Apothecary* has been perfectly right, tho' at the same time conscious the expiring Patient falls a Victim to his *Avarice* or *Ignorance*. What Disgrace must such a scandalous Combination reflect upon the whole Faculty? what a Degeneracy from the primitive Purity of Practice?

The Author of the *Reasons for regulating the Trade of Apothecaries*, (printed some Time since upon a public occasion) observes, "That while the Apothecary is permitted to prescribe, he is invested with
more

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more uncontroul'd Power than the Universities or our Laws think proper to delegate to the most Eminent of the Faculty. Whoever offers himself to the Service of the Public, in the Capacity of a Physician, must have labour'd through a Course of expensive Studies, submitted to a critical Examination in the Schools, and have been approv'd by the Universities as equal to so important a Trust : After this, in the Course of Practice, he is oblig'd to give a Kind of Security for his Integrity as well as Skill, by
giving

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giving his Opinion in Writing, and signing his Prescriptions, which subject him to a Conviction upon his own Authority, if guilty of a Conduct unworthy his Character. What expensive Studies,---what critical Examinations,--what University Sanctions can the pedling Compounder of Medicine produce as Testimonials of his being qualify'd for the Physician's Office? Are his Opinions or Prescriptions reduced to Writing, and signed by him? If he has erred, is it not to be suppos'd he will endeavour to conceal his Errors, or
has

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has the unhappy Patient any toher Security than the Apothecary's *Presumption*, for the *Rectitude* of his Practice?"

I think the *late learn'd* Dr. *Friend* mentions a Time, when there was but *one Apothecary* in this whole Metropolis. Whoever now is Arithmetician sufficient to venture upon a Calculation of the Numbers, will be inclined to think these Gentlemen must certainly be of the Stock of the *chosen Seed*, who in so peculiar a Manner inherit the Benefits of that prolific Command, *Increase*

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crease and Multiply. Nor is it altogether unworthy Observation, that the Difference of their *Manners* seems to have kept equal Pace with that of their *Numbers*.

The *primitive Apothecary* was little more than the honest, simple, blue-apron'd *Druggier* of his Days, whose sole Fund of Learning center'd in his Dispensatory, and whose Physical Ambition never soar'd above the Mechanism of his Mortar. Confin'd to the Meridian of his Shop, he contented himself
with

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with dutifully preparing his Medicines as the Physician directed, and retailing Penny-worths of his Commodities, with a *You're kindly welcome*, unless summon'd abroad for the important Application of a Clyster, or some such delicate Operation within the proper Sphere of his Profession.

Let us now view him broke from the Intrenchment of his Counter, enlarging his Wig to the true College Dimensions, and while he wrests the Pen from the Hand of the Physicians, is barely complaisant enough

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enough to leave the *Sword*,
as the only *ornamental* Badge
of Distinction between the
Brother Practicers.----Now
mounting his Chariot, he
issues forth in Pursuit of *phy-*
sical Atchievements, insinu-
ates himself into every Fami-
ly, where he assumes an ab-
solute Dominion over the
Body, as the *Confessor* in
some superstitious Countries
does over the *Soul* of his cre-
dulous Patient; but only with
this Difference, that, while
the *ghostly* Director is satisfied
with consigning to *future*
Torments only, the *physical*
C always

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always thinks some *present ones* necessary, by way of Preparative. Thus, instead of confining himself as formerly to his Shop, and preparing Medicines for his Patients, he is now continually roaming abroad, and preparing Patients for his Medicines; and, being in happy Possession both of Pen and Pestle, is it to be doubted the former will ever fail of finding full Employment for the latter.

However ludicrous this Portrait may appear, it affords Matter of very serious Consideration,

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Consideration, when upon Enquiry it is found, that the *vast Revenue* necessary to support this Increase of Numbers, as well as Grandeur, is purloin'd from the Purfes of the Public, under the fallacious Pretence of only faving the Doctor's Fee : But whoever takes a Review of his annual Taxation, will find these Gentlemen are very far from throwing their Judgment like brown Paper and Packthread, tho' it be of the same value, into the Bargain ; and take especial Care to secure a copious Compensation for it, in their

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Demands for *supernumerary* Cordials, Juleps, Bolusses, *tertia quaque hora* Draughts, and such like baneful tricking Trumpery. But 'tis pleasant enough to hear them, when charg'd with this Profusion, endeavouring to exculpate themselves, by pleading the Reasonableness of a Consideration for their Visits: So that they *multiply* Medicine, because they *visit*; and *visit*, in order to *multiply* Medicine. -----*Gainful Circle of physical Enchantment!*

In this Point of Practice,
6 how

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how amazing must the modern Improvements appear, when it is consider'd the ancient Practitioners were entirely ignorant that the Embellishments of a *nice cut Paper*, or some *chymical Characters* upon a Label, could transmute a *Pot of Electuary*, or *Bottle of Fulep* into *ten Times its pristine Value*, under the magical Appellations of *Bolusses* and *Draughts*. --- But such lucrative Discoveries were happily reserved for the *physical Alchimy* of our Days, and are even now shamefully urged as necessary to the

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Maintenance of the honest Inventors. Indeed, whoever considers the *plain Druggier* as metamorphosed into the *spruce Gentleman*, must allow there is some Foundation for the Plea : But what would any one think, should some *vain pragmatical Cocker* assume the Figure of a *Man of Quality*, and then plead the Reasonableness of a hundred-fold Consideration for his Labour, in Support of his Dignity ? Would not our *Apothecary* himself (if his Education had luckily furnish'd him with so much Latin) be
apt

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apt to apply the cautionary Proverb, *Ne sutor ultra crepidam*, tho' at the same Time it might be no less suitable a Motto for the Ornament of his own *medicinal Equipage*?

It is related, that, in a certain foreign Country, after the *public Executioner* has dispatched a particular Number of Patients in his Way, he is intitled to the Degree of *Doctor*. If physical Executions in this Country were rewarded with the like honourable Mark of Distinction, who would presume

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to dispute the Validity of these Gentlemens Title to their *Diploma*? But if Learning, Experience, Judgment and a liberal Education are necessary Ingredients in an able Physician, it is to be fear'd they might find some small Difficulty in producing *satisfactory* Testimonials of their Qualifications.

Does a *manual Dexterity* in the Use of a Lancet inspire the Surgeon with a Knowledge of the *Fitness* of an Operation? Or, doth the Apothecary's Skill in the *Preparation*

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paration of a Medicine imply his Judgment in the *Application* of it? As well may the *Colour-Man* assume the Province of the *Painter*; and, because he furnishes Tints and Pencils, think himself sufficiently qualified in the animating Art of a *Raphael Urban*. These Person's Pretensions to Phyfic seem to be somewhat like those of a certain itinerant Professor's to Surgery, who modestly assum'd the Title of *Assistant-Surgeon*, from having serv'd his Apprenticeship to the *Crutch-Maker* of an Hospital.

Is

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Is it not amazing, that, altho' nothing is more notorious than the lamentable Effect which daily proceed from this Irregularity and Abuse in the Practice of Physic, yet no Efforts have been made towards a Reformation. If *those* who are supposed to have the *Superintendance* of the Administration of Physic are found to want either *Inclination* or *Power*, is it not high Time to apply to a superior Authority for a Regulation ; especially when we have such abundant Reason to complain
with

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with *Pliny*, “ *Nulla lex quæ*
“ *puniat inscitiam ; capitale*
“ *nullum exemplum vindictæ :*
“ *discunt periculis nostris et*
“ *experimenta per mortes a-*
“ *gunt, medicoque tantum ho-*
“ *minem occidisse impunitas*
“ *summa est.*”

If any private Physician pre-
sumes but to hint a Disappro-
bation of this *dangerous* and
lucrative System, he is imme-
diately anathematiz'd by these
physical Netherims : every
flip-shod Apprentice, while
the Ink is scarce dry on his In-
dentures, is instructed to ar-
raign

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raign the Propriety of his Prescription ; nay, their very Wives and Daughters are made the tattling Vehicles of Scandal, and sent abroad to alarm every Tea-Table with the dreadful Account of some medicinal Murder committed by this *physical Reformer*. But who would not patiently submit to the *Clamour* of their Throats, could he be happy enough to silence the *Knell* of their *Mortars*?

How foreign soever these Observations may seem to the Matter contained in the following

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following Treatise, yet, as *a free Enquiry into the present State of Physic in this Kingdom, with some Proposals for a proper Regulation of the Practice*, may soon be submitted to the Consideration of the Public, it was thought these Hints might at least be of some Utility in sounding the Alarm, and bespeaking a serious Attention to a Subject of so interesting a Nature. I am,

S I R,

Your most obedient Servant,

T. THOMPSON.



To the READER.

AS the Cure of the Small Pox, (tho' a Disease of so critical a Nature) is frequently undertaken by Persons of little Learning or Judgment in Physic, as Nurses, Apothecaries, &c. in order to render the following Treatise of more general Use, it was necessary, in some Measure, to adapt it to the Capacity of such Ungraduated Graduates; and therefore all Affectation of Style and mysterious Terms of Art (so peculiar to our modern physical Writings) have been as much as possible avoided. If any among the Faculty should think the want of this scientific
Garnish

To the READER:

Garnish proceeds only from our want of technical Knowledge, let them know we had much rather incur the Imputation of being Unlearned than Unintelligible; and when the public Welfare depends upon public Information, shall ever be ready to sacrifice the Vanity of the Author to the Understanding of the Reader.



A
T R E A T I S E
O N T H E
N A T U R E and C U R E
O F T H E
S M A L L P O X.

THERE is no disease to which mankind is unhappily subject, so fatal in its effects, so universal in its influence, and which so deeply affects the minds of all people, as that we are now about to treat : and indeed no wonder, when daily experience proves that neither age nor sex, constitution nor climate can defend us from the over-ruling power of this dreadful malady.--Whether a virulence,

rulence, peculiar to the nature of this distemper, or an impropriety in the methods of treating it, may have occasioned the amazing progress of its devastations, I shall not at present take upon me to determine ; but may venture to affirm, that it is now become more popular than even the Pestilence itself, and frequently not much inferior to it in danger.

After an almost infinite number of volumes have been published on this disease, and so many revolutions been brought about in the theory and practice of its cure, future enquiry may, perhaps, be thought useless and impertinent ; but when it is considered how little satisfaction has hitherto arose from the various controversies on this subject, in which each particular author

seems

seems to have succeeded rather in discovering the falshood of his adversary's doctrine, than in establishing the truth of his own ; surely such incertainty, in a point of so much importance to the welfare of mankind, will abundantly justify its farther investigation, and the contrariety of former opinions may justly apologize for submitting my thoughts to the public ; to which I was the rather induced, as they are the result of some years observations and great experience, a production independent of all delusive systems and fine-spun *hypotheses*, those *baneful fountains* of physical error, which so copiously furnish the deadly draught of mistaken medicine.

As the Small Pox does not appear to have been described by any of the antient *Greek* or *Roman* writers, we

may reasonably infer, that not only those people, but the inhabitants of those other parts of the globe with whom they had any degree of intimacy, were happily free from its calamitous visitation ; for is it to be supposed such illustrious men as *Hippocrates*, *Aretæus*, *Galen*, and *Celsus*, so remarkable for their animated descriptions and accurate histories of other diseases which then afflicted mankind, would have suffered so capital a one to have escaped their nice observation and critical attention ? Yet it is not impossible but other nations, little known to the *Greeks* and *Romans*, might be affected with it ; and indeed there have been physicians, some of whom have endeavoured to trace its progress from *India*, others from *Ethiopia* (that fountain of plagues and poisons) into *Egypt*. But all
that

that is known, of certainty, is that it broke out on the sacking of *Alexandria* by the *Arabians*, in the year 600; and from thence spread itself with their religion and commerce through *Egypt*, *Palestine*, *Syria*, *Persia*, and along the maritime coasts of *Africa*; whence it was transplanted into *Spain*, and diffused by the progress of the *European* discoveries, their wars, and their trade, over almost the whole habitable world.

As the *Arabian* school of physick arose much about the time of this distemper's first appearance among their people, we might naturally expect from their early writers some account of this new species of pestilence; nor are we deceived, for *Aaron*, an *Egyptian* priest of *Alexandria*, one of the most antient

B 3 physicians

physicians of the *Arabian* school, and who flourished under *Mahomede* in the beginning of the Hegira, composed in the *Syrian* tongue, as we are informed by that great historian *Abul-Pharojo*, thirty books on physick ; in which (by the remains of his works which are scatter'd abroad in the *Arabian* writers) he appears to have treated of the symptoms of the Small Pox, explains the time of its eruption, distinguishes the favourable from the dangerous species, and touches lightly upon the cure : to him succeeded in the year 683, *Maserjawaihus*, a Jew physician of *Basora*, by tongue a *Syrian*, who translated the medicinal pandects of *Aaron* into *Arabic* ; he delivers some rules of his own for the cure of those disorders of the eyes proceeding from the Small Pox : then followed *George*, physician to *Almangar*

Almangar ex abbasi dosum stirpe, a great promoter of learning, well-skill'd in the *Arabic* and *Persian* languages ; he wrote expressly on this disease, taught the symptoms, and assign'd what they presag'd about the year 795. *John* the son of *Mesuce*, a Christian, and *Syrian* by birth, appeared upon the stage, a man of wit and great eminence ; it was he who opened the medicinal school at *Bagdad*, under the protection of the *Cailif Rasbid*, to whom he was physician, and from whence issued many ornaments to the learned faculty ; he writ of this disease, treats of the eyes, and advises the body, if necessary, to be kept open till the seventh day. After him succeeded *Isaac Johannitius*, the son of *Honainus Ebadiensis* ; he recommends bleeding, *quasi ad deliquium*, and the body to be restrained, if too

loose. Then flourished *Joseph Alsatier*, in the year 900, called the *Vigilator*, a man of great name and erudition, who compiled almost every thing which had been written before his time on physick, yet says but little on this subject. If to these we add *Judæus Fabri*, *Tormondi*, *Bugajesu*, we have all among the antient *Arabians* who treated on this distemper till *Rhases* appeared, who is the first and only author now extant, who favoured the world with a complete treatise on the Small Pox, and Measles, a species of that distemper. He lived to a great age, and died about the year 932. Many thought him of *Mauritania* ; but he was buried at *Recia*, from whence he took his name. He was skilful in musick, a great philosopher and physician, and

and an honour to the age he lived in.

The treatise he wrote of the Small Pox was first translated by a certain *Greek*, from the *Syriac* into his language ; from the *Greek* version into *Latin*, by *Georgius Valla*, and others ; and lately a version by *Solomon Negri*, published from an *Arabic* copy of the *Leyden* library, sent over to *Dr. Mead*. With this author begins the story of the Small Pox from physick writers ; but what are writings to nature, the original in all countries ; in all ages the same unerring guide ! This disease in the *Syriac* tongue was termed *Chaspe* ; a word in that language, as well as in the *Hebrew* and *Arabic*, signifying *desiderium*, &c.

The

The *Greek* version renders it *Εκφλογόω*, the *Latin* translator *incendium*; but the word *variolæ*, which the *Latins*, *Italians* and *French* have followed, comes from the *Hebrew* *בַּרַם*, a *spot*, a *speck*. Hence the *Latin* *varus*, hence *variolæ*; the *Italians* *vajole*, the *French* *vérole*, the *English* the *Small Pox*, the distemper we now propose to write of.

I shall first discourse or animadvert on those celebrated writers among the moderns who have chiefly distinguished themselves upon this subject; that it may hereafter appear how far I have followed them, where I have endeavour'd to improve upon them, or to correct their discoveries, and how far I have ventured upon my own bottom, and
struck

struck out a path never before trod ;
 I shall then proceed to describe
 the first stage of the disease, that is,
 from the beginning of the *va-*
riolous fever till the eruption, from
 thence till the eruption be complete ;
 then to the last period of maturation ;
 and lastly, through the whole course
 of the drying, or what is vulgarly
 called the Turn of the Small Pox,
 that is, to the last period of the
 disease. I shall then distinctly treat
 of the several diseases arising fre-
 quently from either the violence or
 the injudicious treatment of this
 distemper ; because there is nothing
 more extravagant, than to direct
 what is necessary for the Small Pox
 in general ; nor any thing more ra-
 tional, or more essential, than to
 know what is to be done at such a
 time, in such peculiar circumstances
 of the disease ; for a disease differs
 much

much at various times, and requires such treatment at one time, in one period, which would be highly improper at another.

We have, at least, a thousand authors extant who have treated of the Small Pox. Those for the first five hundred years varied in their doctrine and practice but very little ; neither can we say there have appeared any controversial writings of moment among physicians, till our great observer *Sydenham* arose. The practice before his time seems to have been a common beaten path, a practice founded upon some foolish *hypothesis*, or confiding in empirical medicines. Their *intentions* were chiefly to promote the eruption of the Small Pox as soon as possible ; for they imagined some peculiar kind of poison was to be expelled
from

from the vital, or noble parts to the circumference : and again, after the eruption, and through the whole course of maturation, or what is vulgarly called the Filling of the Small Pox, the same intentions prevailed ; for they always feared this supposed poison, which they thought now expelled to the external parts, should again return to the internal. This theory established for so many years, called for medicines of the heating and sudorifick kind, what are usually termed Cordials ; these were supported also by a regimen agreeable to such medicines, when, still to be consistent, the sick were perpetually kept in a close room, not permitted to breathe a cool and temperate air.

The reasons which induced our physicians in these days to this comportment

portment in their practice, seem to me to be these: they observed, that during the first and second stage of this distemper, that is, from the first beginning of the *variolous* fever until the last day of the eruption, their sick were agitated with great inquietudes ; and, that the various symptoms run very high, and soon after generally to be appeased. This, they thought, was a full demonstration, that by promoting the eruption by heat and cordials, they expelled some poison or morbid matter, and so cured the sick.

But how great will *Sydenham* appear, when we shew the motives which led this wise man to a method of practice, which entirely overthrew that of the Cordialists, who till then had prevailed, with respect to the first and second stage
of

of this disease ! He took nature for his guide, depending wholly upon observation and experience, the only principles we can reason from.

He observed, that among the common people, where no means had been used to raise the flame, and where no physician interposed, that the later and slower the Small Pox appeared, the more favourable and distinct they were ; he observed, that if the Small Pox make their appearance the first day of sickness, that this distemper was equal to the plague or pestilence in danger ; if they appeared on the second day, they were extremely dangerous ; if on the third, less so ; but if they broke out not before the fourth day, they were generally of the most distinct and favourable sort, and always without danger. From

whence he very justly concludes, that it was a very dangerous practice to force out the Small Pox by heating and stimulating medicines: and that physicians, instead of desiring an early eruption, ought to dread the appearance of it before the third or fourth day.

Sydenham having thoroughly considered the course which nature took at this period, not only left the eruption to make its way, unassisted by cordials, which he thought was adding fire to fire, but where he found the heat intense and the fever high, he took away a little blood, committed the sick to a temperate and cooling regimen, allowing them to breathe the fresh air.

He was soon followed by some of the learned profession; others
con-

contended with great obstinacy for the long establish'd practice ; hence arose that very short and compendious distinction, *the hot and the cold regimen*, and which continues to be the language of the vulgar to this day. Sydenham made no farther discoveries in the Small Pox, if we except the very elegant description he gives of the disease, and advising the use of bleeding with some lenient physick, instead of cordials ; but confin'd the time of evacuations precisely to the fourteenth day, judging this practice too adventurous, unless at that time, and upon very extraordinary occasions. He also observed, That towards the sixth or seventh day, when the fever of maturation should begin to rise, and rise gradually, as it always does when the disease is kind, then the pulse is restor'd almost to its natural state, the eruptions

C
tions

tions are all out over the whole body, the water well-coloured or turbid, the eyes cool and not shining with that fiery look as before, and all the other high symptoms, which cruelly agitated the sick now appeased ; he observed with many, that this fever came not always on by gentle and slow degrees, but rose at once, as a storm: the patient suddenly is light-headed, the eyes bloodshot, and streaming, the urine pale and clear as rock water, the pulse quick and hard, the throat inflamed with sharp humours, &c.

Here he strikes out a new path, surprizing for his time: he directs the patient to be taken out of bed, and exposed to the cool air of his room, the feet to be bathed in warm water, and opiates to be repeated from time to time, till this kind of phrensy;

phrensy, and other violent symptoms give way to sleep. He then falls into the practice of the physicians, whom he opposed in other points; and from this time to the thirteenth day of the disease, he allow'd, as they did, cordials; and from the same mistaken theory, reasoned as others did: *nature is too weak, the morbid matter must be kept out*; for, if the face subsides through weakness, the spitting becomes more difficult, and the matter spit up viscid, or cannot be expectorated at all, the sick dies about the tenth or eleventh day. When these circumstances happened, he wisely judged there could be no safety if the expectoration returned not again, and the hands swelled; and which ends he thought were only to be obtain'd by supporting nature with the most powerful cordials. This was

the hypothesis he reason'd from, and which involved, at that time, all the medicinal world, and even *Sydenham* himself; for they all suppos'd some essential poison, peculiar to this disease, which before spent itself by the salivation, and swelling of the face, now return'd again to the internal and noble parts; that nature was too weak and debilitated, unable to protrude this malignant matter; that she must, unless aided by cordials, sink under the weight. But notwithstanding he was unable to obviate this last terrible stage of the disease, yet he reasoned and acted, on many occasions, with uncommon abilities; and at last, like an able mariner, who had made many and great discoveries, yet stood in need of more. He informs of dangers which he was unable to shun, and points out those particular rocks against which he and o-
ther

ther physicians had been shipwreck'd ; he says (and here even excels the ancients in description) If what should be expectorated, grows too thick and viscid to be brought up, If the face that was swelled but just before, suddenly subsides, If the intermediate spaces between the eruptions, that were florid like a damask rose, again becomes pale or livid, and the spitting returns not in a few hours, then the sick grows hoarse, dull and oblivious, breathes with difficulty, and soon expires. But if the face continues swelled beyond the eleventh day, and the spitting returns, the hands swelling, and the face should sink gradually, then the sick certainly lives. We may compare what *Sydenham* did, in respect to physick, to the efforts made by the Lord *Verulam*, in philosophy;

that noble and illustrious author ; after having made all the surprising discoveries expected from so great a genius, pointed out to posterity what future ages might discover, it being impossible for the short life of one man to trace out and compile so immense an history as the boundless field of nature affords. The honourable Mr. *Boyle* began where the other left, and happily extended his discoveries till the great and sublime philosopher Sir *I. Newton* closed the scene.

Thus physic stood with regard to this disease, till Monsieur *Besse*, *Helvetius*, *Friend*, *Cade*, *Frewen*, *Boerhaave*, &c. appeared ; these learned physicians thought, like *Sydenham*, that the Small Pox was a disease of the inflammatory kind, and observed, if the face fell, and expectoration
ceased

ceased before the eleventh day, such symptoms prefaged certain death ; that the usual process, by high and potent cordials, not being able to avert the fury of the distemper, they introduced purging and bleeding, a method as essentially different from the then established doctrine, at this critical period of the Small Pox, as *Sydenham's* was, with respect to the first stage. These physicians, and their followers, differed so widely from the contenders for the former practice, that no medium could be found to reconcile their opinions, they were so intirely opposite in their intentions, as well as contradictory in their practice.--The *Cordialist* judged the sick to be too weak, the fever too low, therefore administered his cordials. Those for the *new method*, affirmed, that the fever, by the re-

tention of the morbid matter, was too high, and therefore directed evacuations to carry off this supposed matter, which before spent itself as they all thought by the swelling of the face, and expectoration. How unhappy, how perilous, the condition of the patient, whose safety depended on such a contrariety of opinion!

The women, indeed, who have long claimed a kind of privilege to dictate in this distemper, adhering to the old custom of keeping the patient warm, and administering cordials, &c. were astonished when *Dr. Friend* introduced purging and bleeding, and that at a period of the disease when they imagined, if ever cordials were of use, they must be so then, at a time they imagined the sick was languishing and dying through weakness. Purging was so

so direct a contradiction to their method, that they held it to be downright murder. *Friend* wrote in support of the new practice, and *Mead*, *Frewen*, *Cade*, &c. came into it, upon which a controversy arose, wherein *Woodward*, and others, opposed it: however, many physicians, from that time, have ventured, where extreme danger appeared in the last stage of the Small Pox, to give a dose of purging physic, and sometimes to take away a little blood.

But as *Friend* reasoned also upon an *hypothesis*, imagining some kind of *poison to be carried off by purging*, he ventured not to give such a medicine so long as the swelling of the face continued, and any considerable spitting remained. Thus he delayed

layed putting this method in practice till the patient was upon the point of expiring, and which was then generally too late; besides, this *hypothesis* occasioned his mistake, of the nature and cure of the Small Pox; for he reasoned thus: While there is any of the morbid matter passing off in the usual course, by the swelling of the face, however little, as well as the spittle, however viscid and decreasing, we are to expect no farther assistance this way, when we once begin purging; for the whole stress then is by carrying off the morbid matter by stool. He considered the patient in a depressed state, not depressed by the violence of a fever, for if he had considered this case as that of a person sinking in a common pleurisy, from the height of the inflammation, he would have avoided this error, in practice

tice ; while he purges, he fears his patient may sink, and supports him with cordials. By these means he is puzzled, not acting consistently, as in an inflammation well known, such as a pleurisy ; here he would have considered a depressed pulse, an undulating pulse, clammy sweats, great weakness, &c. as the effects of a high inflammation ; he would have considered the patient oppressed from the violence of the fever ; nay, should a looseness appear, it alters not the case, his whole aim would have been to cure the inflammation by evacuations, from whence he justly would expect the pulse to rise, become fuller and more distinct, which, in reality, if the patient be recoverable, always proves to be the case. *Friend* and his followers then reasoned not in the Small Pox, as *Sydenham* and they

they themselves did in a Pleurisy, but the expulſion of the ſuppoſed morbid matter was what he chiefly aimed at, which *hypotheſis* moſt certainly kept him from the true knowledge of the nature of this diſeaſe. And notwithstanding he directs as *Helvetius* did, purging in the laſt ſtage of the Small Pox, which evacuation, I muſt own, is one of the proper means to limit the fever, yet as what he did proceeded from an *hypotheſis*, and not from a true principle in phyſick, he deſerves no juſt praiſe : *hypotheſis* kept him in the dark ; he was not able to diſtinguiſh at what time ſuch a medicine ſhould be given, how often it ſhould be repeated, or what kinds of purges were preferable ; or what other means more effectually ſhould oppoſe that fever, which, if not checked betimes, moſt certainly deſtroys the patient. His conſidering
purg-

purging in the Small Pox, without knowing the reason for acting so, is, after all, but a kind of empiricism ; for he depends on the specific force of one medicine : whereas, had he been led by other principles, he would have known, that by subduing the fever he obtains his ends. And this purpose may be obtained by various means ; for whatever medicine has power to subdue the inflammation, will both prolong the spitting, as well as the swelling of the face, the two principal objects, in the last stage of the Small Pox, deserving the attention of the physician : for if these two circumstances succeed, the patient certainly lives.

Boerhaave is the next author, who has wrote expressly on this disease ; an author of the most profound erudition, and extensive practice ; who,
after

after having read, as he says, a thousand authors, gives it as his opinion, that there are scarce any worthy to be read, unless *Sydenham*. *Boerhaave* has gone further towards a discovery of the nature and cure of the disease, than all the physicians who preceded him. He considers the disease as a true inflammation; he not only thought it improper to force the Small Pox out, by heating medicines, for he well knew, the sooner the eruption appeared, the more fatal; but he also ventured to restrain a too sudden eruption; nay, he ventures farther, and recommends it to physicians, hereafter, to attempt to cure this disease in the very first stage, by preventing even a suppuration of the pustules. And he reasoned thus: In a *Pleurisy*, in a *Quincy*, and other *inflammatory Fevers*, is not the physician's attention principally

cipally to resolve the tumors, and labour all they can to prevent the formation of matter ; why then do we suffer matter to be formed in this distemper ? And is not the resolution of such tumors, by the power of medicines, in other words, the curing of such distempers ?

Altho' *Boerhaave* reasoned so justly, yet he either was not capable of bringing this to bear, or the disease is impossible to be subdued without taking its usual course, that is, by suppuration ; yet this advantage accrued from such reflexions, by endeavouring to prevent the eruption, which could not be retarded, generally, beyond the fourth day, yet the violence of the Fever was so far abated, tho' not to be extinguished, that it produced the eruption later, and of consequence less, and for the same reason the suppuration was kinder,
and

and therefore the disease less dangerous. It seems wonderful to me, that so great a man, who reasoned with such precision, and practised with so much judgment, had not thoroughly comprehended this disease. Upon the rise of the secondary Fever, as that encreased, and the spittle became more viscid, the face subsiding, he abandons, as it were, his former reasons and method of practice ; his views are now entirely for promoting salivation, and in order to promote this great end, he thinks some means may be found out ; antimonial medicines he seems to think the most probable to effect it. Altho' he mentions no morbid matter, yet what he proposes, implies as much. He must suppose, that the spitting carries off some poison, or morbidick matter, as people think a salivation answers the same

same purpose in the venereal maldy. Here he falls into an *hypothesis* which points out to him the use of an empirical medicine ; for, had he reasoned as justly on this stage of the disease as he did in the first, 'he would have found, that limiting the violence of the Fever, (let the medicines or methods be what they will that controul it) would have carried on the salivation, and answered this point, as it did in the first stage of the disease, when the inflammation being abated, the pustules rose higher, and suppurated with kinder matter.

Authors who have wrote since, as they have said nothing worth our notice, but what they have gleaned, and generally misapplied from the writers I have quoted, we shall pass over in silence, and come to

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the history of this kind of universal disease. The Small Pox, in general, is of the inflammatory kind, having all the signs in common with other inflammations, but in *species* it differs essentially from them. In order to prove that it is an inflammation *sui generis*, it is necessary to shew what are the signs of an inflammation, and to lay this down as a kind of theorem, agreeable to the custom of mathematicians; because when we have a perfect notion of an inflammation in general, we shall then proceed, by way of analogy, to treat of the nature and cure of this particular species of inflammatory fevers.

A tumor, from whatever cause, that arises upon a human body, attended with pain, pulsation, heat, the part also discoloured, the blood,

at the same time, sized, the urine generally higher coloured, the pulse quicker than ordinary, and often harder ; these symptoms arising still higher, such a tumor, if not opposed, passes on to matter, or ends in sphacilation, which is an entire corruption of the part affected : and is called by physicians, *Phlegmenous*, a term imported into our *English* tongue, to signify burning or inflammatory ; and as the blood is always sized in proportion to the state of such tumors, such blood may be properly called inflammatory. And as the blood is one of the most distinguishing signs of an inflammation, it will be proper to shew the various changes in this vital fluid during the course of such tumors. Whether a tumor arises from a contusion, fractured

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bones,

bones, from the poison of serpents, from contagion, or from whatever internal or external cause ; the moment it begins to be formed, that moment the blood begins to be changed. If ten thousand men were let blood, and not one of them had the least appearance of size in their blood ; and presently after, if some cause or other should produce an inflammatory tumor, soon the blood becomes sized, and as that tumor hastens to matter, or sphaculation, that size increases according to the progress and state of the tumor ; so that, in time of suppuration, the size of the blood will be more in quantity than it was the day before, and more that day than at its beginning : so in a state of mortification, the quantity of the size will still be in proportion

equal

equal to that calamitous state of an inflammation. As to the colour of the size, there is also something necessary to be observed ; the pale colour shews less of heat, or fire, or inflammation, than the yellow, and the yellow less again than the green, the dark more than any. The consistency of the size which is always upon the surface of the *Crassamentum*, or cake, which swims in the *Serum*, the more viscid and tenacious, the less fire ; the more dissolved, (which sometimes is like a jelly half boiled) infinitely the more danger ; for when it is thus in a state of dissolution, the parts inflamed always mortify ; and the inferior parts of the *Crassamentum* consist of a black putrid gore.

What I have here said, in regard of the blood, is the result of

above a thousand observations on all kinds of inflammations in general ; and is the clearest notion I am able to give of an inflammation ; and I may venture to say, is what can be the most certainly known in the whole practice of physick. I have fixed this, as it were a *basis*, to build the whole superstructure upon, and what I thought absolutely necessary, because I shall have perpetual recourse to it, in order to prove what I am about to treat of. The Small Pox then answers, in general, to these signs of an inflammation, and therefore ought to be looked upon, and treated, in general, as such. But as it differs specifically from all other diseases, it also requires a particular history and method of cure.

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The Small Pox being an inflammatory disease, it is most certain, that the body must be disposed to receive an inflammation, and whatever cause hath power to produce an inflammation, may possibly produce this species of an inflammation. The disease then may be produced from violent exercise, change of air, particular climates, drinking spirituous liquors; for those causes productive of inflammations in those who have had the distemper, also produce the Small Pox, instead of such inflammations in those who have not had this distemper. History proves this to be true, and daily observation still confirms it the more. Who has not observed, that hard drinking, change of air, violent exercise, have produced the Small Pox in some subjects, and not in others;

the reason of which is, I must confess, as yet, inexplicable to me, and will, perhaps, be a secret for ever to others?

In those countries where the plague and malignant Fevers are stationary, according to the climate and disposition of air in those countries, we observe the Small Pox to be also epidemical, and generally fatal. And, perhaps, under the appearance of the Small Pox, they sometimes have the Plague.

Sydenham observed this in our own kingdom, and *Prosper Alpini*, in *Egypt*. We have had many physicians, who have laboured to solve the *Phænomena*, and to shew what there is in man, which disposes him to the infection of this disease, which
when

when he has once had, returns no more. *Fuller, Drake, Helvetius*, and many more, have ventured to assign such physical and mechanical reasons, which, out of pure respect to their characters, I shall forbear to mention. And what they have said in respect to the morbid matter, seems to me just as much to the purpose. What we have here taken notice of, enables us to prognosticate what seasons, and what constitutions are most probable to produce this disease, and to whom the Small Pox is generally most fatal.

Since every person that is seized with the Small Pox, although his blood was not inflamed before, must necessarily now undergo a state of inflammation, and which generally begins to appear upon
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the second or third day ; therefore all such who are of an inflammatory habit of body, whether hereditary or acquired, must of consequence be disposed to have this malady in a higher degree than those of a contrary disposition. Such people, who actually labour under any inflammatory disease, must of course be still in greater danger, if the Small Pox seizes upon them, and must expect the most fatal sort, because then the sick must suffer two diseases, the former and the Small Pox, both at the same time ; for upon the second or third day, the blood that was inflamed by the preceding disease, now begins to acquire another degree of inflammation peculiar to the Small Pox, which will then be as fire added to fire. But there is some difference
again,

again, in respect to the parts of the body that were formerly in a state of inflammation, before the Small Pox begins, that is, such whose lungs, or brains, or throat are particularly inflamed when this malady first seizes. For as no person dies of an inflammation, till the throat, lungs, or brain become affected, and as no person passes thro' the Small Pox without those noble parts being in a manner inflamed, more or less, such must be exposed to the greater danger, since, besides undergoing the Small Pox, they must also undergo, at the same time, a true Peripneumony, a true Quincey, a true Frensy ; that is, they will have the Small Pox complicated with an inflammation of the throat, lungs, or brains. And I believe no one ever died of the Small Pox, but
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where some other inflammations, constitutions, fractures, or phlegmenous tumours, difficult to resolve, raise the Small Pox to a higher degree. Women, before the *Menses* are over, have it more favourable than after, women than men, and children than men or women; and this is so, generally speaking, not but particular cases are exceptions to this rule. There are certain causes, such as unusual diet, wars, particular disposition of the air, producing malignant Fevers; if the Small Pox comes at such times, it always runs very high. *Sydenham*, as I said before, observed, that the Small Pox, during the time malignant Fevers raged in *London*, was very fatal; and *Alpini* says, that in *Grand Cairo* in *Egypt*, during the months of the year when

when the Plague raged in that populous city, the Small Pox was commonly attended with purple and livid spots, emulating even the Plague in degree of inflammation and putrefaction.

From hence we may certainly conclude, that all such people who are subject to diseases, not attended with fixed and inflamed blood, as aguish, hysterical, or flatulent constitutions; those who have suffered the loss of much blood, either from wounds, the *men-
ses*, the hæmorrhoides, miscarriages, or those whose blood is impoverished by too low a diet, can never have the Small Pox to a high degree, provided such causes just precede the disease. We shall now go on, and shew the signs and state of the dis-

disease which precede the eruption.

The Fever preceding the eruption which we will call *Variolous* (for till the eruption appears it cannot properly be called the Small Pox) arising from some infection, communicated by the air, or the touch of a *variolous* subject, fear, or some other cause which hath power to produce this species of an inflammation, begins generally with shiverings, rigors, lips pale, the nails livid, after the same manner with other inflammatory Fevers. Sometimes this disease arises by way of revolution ; as thus : A common Cold, a light Pleurisy or Quincey, the Measles, the Chicken Pox ; and if it comes on before these diseases have spent themselves, yet are we able to distinguish the origin of the
variolous

variolous Fever. Suppose a person, some days ill of one or other of these preceding maladies, notwithstanding the usual symptoms peculiar to these continuing, especially heat and feverish quick pulse, the sick is suddenly seized with rigors, shiverings, or a violent cold fit, like an ague, the lips and nails pale or livid; and altho' the hands and feet are extremely cold and chilled, yet is the pulse, altho' quick before, now become much more so: so that we might plainly perceive the addition of a new Fever. These symptoms follow which presage a future eruption of the Small Pox; Head-ach, Lassitude, the limbs cramped, painful, heavy, the patient is thirsty, extremely sick, or vomits; if women or children, what is thrown up, generally green, resembling an hysterick case, the eyes glaring, the lids

lids edged round with an inflammation, resembling a person who had drank much, unable to bear the light, the face glowing, great heat and dryness over the whole body, costive ; but if the inflammation runs very high, the patient purges, the stools are generally dark and fetid ; pains in the small of the back, across the loins, and an unusual weight, oppression in the pit of the stomach. These two last symptoms, when attended with sick qualms, and a drowsy soporiferous aspect, are the most distinguishing signs, which physicians call Pathognomonick, marking essentially this *variolous* Fever from all others, unless we except the Measles and Chicken Pox ; where, indeed, the symptoms are something equivocal, but the violence and particular duration of these symptoms will
always

always distinguish the Small Pox from these.

There is one symptom yet, which *Sydenham* observed, but that is peculiar to children, I mean, a Convulsion Fit, tho' an extraordinary drowsiness must precede the Fit, with an uncommon lustre in the eyes. Such a Fit announces the eruption to be near at hand. During the *variolous* Fever, the patient inclining to sweat, rather presages the distinct kind; but we are not to depend too much on this symptom, for the confluent kind hath sometimes followed. These are the symptoms which precede the eruption, and also continue increasing and rising higher, till the Small Pox be, in a manner, intirely out, and the pulse is remarkably quicker the last

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day but one of the eruption, than at any other time.

There is no disease demands so much the physician's attention, in observing the time, circumstances, and peculiar stages, so remarkable as they really are in the Small Pox. Hence the most certain indications arise, pointing out when we are to act, and when not. From hence we also may attain to that degree of knowledge, so as to prognosticate either the life or death of the patient.

The time of its first appearance is of all the most important, and therefore to be well considered; and as it is a point of the greatest moment, I wonder authors have been so loose in the calculation of the time. If the Small Pox appears the first day of sickness, 'its mortal;
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if on the second, not much safer ; if on the third, dangerous ; if on the fourth, or a little later, the Small Pox is generally of the distinct sort, and without danger. The summing up, and dating the time of the eruption, we will illustrate by several examples. A man is seized with a *variolous* Fever at six in the morning, at noon, or at six at night, at any time between twelve in the morning, and twelve at night ; the day consisting of 24 hours, or a natural day. If the Small Pox begins to appear at ten at night, and the patient sickened at three, five, or eight in the morning, physicians say, the Small Pox came out the first day ; but if the patient sickened at noon, six in the evening, or eleven at night, physicians say, it broke out upon the second day. If the patient sickens, for example,

April the 1st, at three in the morning, at six in the evening, or eleven at night, and the Small Pox appears *April* the 3d, at one in the morning, four in the afternoon, or ten at night, they still say, the Small Pox came out on the third day. If a patient sickens on *Monday* morning at two, one in the afternoon, or eleven at night, and the Small Pox makes its appearance on *Thursday*, about two in the morning, five in the afternoon, or ten or eleven at night, we fix the eruption to the fourth day. Any one may see how loose and equivocal these calculations, hitherto established by physicians, have been: their not having fixed the time of eruption exact enough, has been the occasion of the prognosticating the Small Pox to be a kind sort; or to be the confluent when sometimes it happened to be the

the reverse. And as, therefore, fixing the time of eruption with great precision, is one of the greatest and most certain indications in our practice, the omission of this hath, too often, been the occasion of fatal mistakes in practice : let us now shew the incertitude of this rambling method of reckoning the eruption, and establish as exact an account of the time of the eruption, as the nature of the thing will bear. In order to this, we must come to a calculation by hours.

A patient sickens at two in the morning, the Small Pox appears at eleven at night ; it comes out the first day, the patient having been sick twenty-one hours, and no more, before the eruption : suppose again he sickened at six in the evening, and the next morning it appeared

peared at five, physicians will tell you, it came out on the second day ; yet the patient, all the while, was only sick eleven hours before the eruption ; and, consequently, the eruption appeared sooner, by ten hours, in this case, than in the other ; which was called eruption on the first day. Again, a man is seized with the Small Pox, about eleven, for example, on *Monday* night, it makes its appearance on *Wednesday* morning, about two : the Small Pox, in the common way of reckoning, appeared on the third day ; yet, after all, the person was ill of the *variolous* Fever but three hours above one natural day. Suppose one sickened of the Small Pox at two on *Tuesday* morning, and it made its appearance on *Thursday* night at eleven, it is said to come out on the third day ; in this case,

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the patient labours under a *variola* Fever the space of sixty-nine hours, in the former only twenty-seven hours ; and, consequently, there is forty-two hours difference : we may from hence conclude, how uncertainly physicians must prognosticate, from such an erroneous manner of calculating the time of the eruption.

Let us fix this as a truth in general, to be regarded, that by how much the later the Small Pox makes its appearance, by so much the kinder and more distinct ; and that the former manner of calculating by days, is too equivocal to be depended upon : we will also fix upon this for such a compass of time, to be called late or early : if the Small Pox makes its appearance before the first twenty-four hours of illness are

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expired,

expired, we are to expect the disease to prove as fatal as the plague : if from thirty to thirty-five hours after the first illness, extremely dangerous : after forty, to forty-seven, or forty-eight hours, less so, but rather the flux sort, than not : if it appeared after seventy or eighty hours, commonly the distinct sort.

Having fixed the time of the eruption, and shewn the signs or symptoms which precede this stage ; we shall now give a history of the signs and symptoms attending the whole course of the eruption. According to the violence of the *variolous* Fever, the eruptions appear sooner or later, and they are of the distinct or confluent kind ; that is, they are more or less in number ; or they are so few, that they are scattered over the body, like so many
grains

grains of corn sown and springing up distinct from each other ; or otherwise, in heaps or clusters, the roots being entangled together. Now the Small Pox, in the thick sort, when they first appear, are extremely small ; but as they grow, their basis enlarge, so that, as these spread, several pimples that were distinct yesterday, to-day become complicated ; as so many small grains of quicksilver strewed thick upon a table, if each globule was to swell and extend, they must run into one another. After this manner, we say, the Small Pox runs together ; hence we call it the distinct sort, or the confluent : and as it is impossible for a very great number of these pustules to be upon the body, without running together, because they are all in a state of growing and extending at the basis, after four or five

five days they must take up greater spaces: we may conclude then, the fluxing is but the effect of the number of the eruptions. But there is, indeed, something here worthy a distinction (for I think we cannot be too exact in the description of this disease;) although we are principally to depend on the number of the pustules, yet the distribution of them over the body, deserves some attention: in one subject there may be a greater number of eruptions, and those by their situation, distinct from each other; in another case fewer, and yet they run together, are complicated or flux, *viz.* as in the field sown by a skilful farmer, a greater quantity of wheat arises distinct; in that sown carelessly, and in heaps, it arises in parcels entangled and matted together, with great spaces between.

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Now should the Small Pox on the face or body appear in this confluent manner, it should be called the flux sort. It is of much importance too, what parts of the body are inflicted more or less; the Small Pox fluxing upon the face and head, although the other parts of the body were exempt from the disease, yet is the case not without danger; but if the face be entirely covered, and the body too, the danger must be still the greater. We are not to be surprised at the danger being greater, when the face and head are principally affected; because all physicians very well know, that a turgency of the vessels about the brain must give us just cause to fear a fatal event.

Afer having given this idea of the distinct and confluent sorts,
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let us trace and describe these eruptions from their first appearance, till they are entirely out, and spread over the whole body. This period of time, hitherto, has been said to take up the space of three days; but this demands as scrupulous an inquiry as the *variolous* fever did: For example, the eruptions begin to appear this day at three in the morning; physicians tell you, they will be all out on the third day, dating the first day of their beginning to mature, the fourth day after, the appearance of the Small pox: they, therefore allow three days for the eruption,

The following example will sufficiently shew the fallacy of this way of calculating, as well as the necessity of a more exact history of the

the breaking out of the Pox: suppose a physician attends a patient on *Monday* night, about eleven of the clock, and discovers the Small Pox just appearing; he returns again on *Wednesday*, no matter what hour, whether in the morning or eleven at night; he declares the eruption entirely over, assigning this reason, it appeared on *Monday*, and this being the third day, the eruption must be compleat. How equivocal is this, as to time? As if the appearance of the Small Pox at one in the morning, two in the afternoon, or eleven at night, his visiting on *Wednesday*, early in the morning, or late at night, made no difference! When it is visible that there may be even twenty three hours taken out of the first day, and as many out of the third day, which together make up forty six hours: therefore

therefore their asserting that the Small Pox is three days in coming out, concludes as equivocally, as to time, as if seventy two hours, and twenty six hours differed not at all. Now there is nothing more uncertain, or, rather impossible than to fix one certain period of time for the eruption; because it is an effect flowing from a peculiar cause, which varies perpetually, and the eruption must vary accordingly. An inflammatory fever is that cause which runs higher, or not, and acts with more force in one constitution than another. A man may, with as much propriety, ask how long it will be before this tree buds, when it will blossom, or the fruit ripen? And although there must be necessarily a certain time, yet that time will vary and be circumscribed, according to the climate it flourishes in,

in, and the soil that nourishes it, added to the culture and skill of the gardener. As the power of the *variolous* fever promotes the eruption of the pustules sooner or later, according to the degree of its inflammation, so the same cause either forces it out by degrees, or suddenly: thus, if the inflammation be not considerable, some little hard pimples appear on the forehead, nose, cheeks, then upon the breast, the hips, thighs, over the trunk of the body, and last of all, upon the legs, especially about the feet: or this inflammation acts with more energy; and then they break out over the whole body at once, like a rash; or the fever being rais'd to an immense degree either from some peculiar habit of body, pestiferious air, or hot medicines; and then the reverse appears, the pimples are few in appearance, too small to be seen, rather like a
 blush

blush upon the face, the skin arid, and dry; and upon a closer inspection there appear numbers sticking in the skin, unable to break forth; purple or livid spots are frequently sprinkled over the body, but more about the breast, neck, loins, and hips, than any where else: the patient often makes bloody water; and these two last symptoms may be foretold by another symptom, which is this, an excessive pain across the small of the back.

As the fever is higher in some constitutions than others, and therefore occasions the appearance of the Small Pox sooner or later; so also there are some parts of the body where this inflammation exerts itself with greater force, which is the occasion of the eruptions appearing sooner or later, in greater numbers, or not, according to the situation
of

of the fire, or inflammation. We can compare the time and course of the eruption to nothing more aptly, than a field sown with corn: Although sown at the same time, yet the grain comes up, or is retarded, ripens, or is backward, according to the situation, the soil, or manure, of the different parts of the field.

Fixing the course of the eruption to three days, indiscriminately, in all constitutions, as hath been done hitherto, is for the reasons I have given, without any solid foundation. But nevertheless there is a certain period of time necessary for an entire eruption; yet that varies, according to the force of the fever, and which time, also, may be calculated: but certainly, such calculation, by days, would render this part of the history of the

Small Pox as obscure, and equivocal, as physicians have been in calculating that period of time from the first attack of the variolous fever, to the first appearance of the Small Pox.

In the confluent sort, we may look upon the eruption to be entirely over between the fifth and the sixth day, counting from the first day of sickness; the distinct sort demands six natural days. We must expect some cases where the Small Pox, is retarded, or a new eruption added to the former, occasioned by some accidents, or improper or rash methods pursued. The fever, and other variolous symptoms, which ran very high before the eruption, and rising with greater violence till the midst of the eruption, now begin to relax, and
entirely

entirely abate upon the total eruption of the Pock. I mean in the distinct fort, and ought also to be so in the confluent, if the physician does his duty. The equality of the pulse upon the sixth day, resembling that of health, will be the distinguishing sign of this second stage, which may be looked upon as the most remarkable in the Small Pox. Here, then, is a pause; the patient seems to rest for a time, and is easy; the *first* fever, which was without intermission, ceases now, and is the only time of intermission nature has allotted, till the disease be entirely over. It may be looked upon as a calm between two storms; but this calm precedes the most violent storm, which is to come. The patient reposes thus for six, ten or twenty hours; and then sooner or later, according to the

violence of the disease, all on a sudden the *secondary* fever comes on by slow degrees, if it be a benign sort, or it bursts out, like a hurricane, if the inflammation be high; the eyes becoming suddenly blood-shot, or streaming with water; the pulse quick; the throat sore; the urine crude, pale, or of a straw colour; the patient agitated with great restlessness and inquietude, burning with heat, starts from the bed; unable to bear confinement; he seeks the air; endeavours all he can to free himself from this ardent heat; he becomes delirious, and often even phrenetic.

This last symptom is the most violent during the course of the disease, as well as most obstinate. The secondary fever, which is the fever of maturation, begins, as I have said, about the sixth or seventh day; and
according

according to the violence and state of the inflammation, the several eruptions begin to spread, grow redder, rise with a point, elevated or depress'd; they hasten on to matter sooner or later; the matter is benign, well concocted, sanious, or full of water, like a blister rais'd by fire; they bleed; or lastly, if the inflammation be carried to the highest degree, these small tumors, or eruptions pass beyond the state of supuration, they appear burnt at top, as if sear'd with an iron; the skin, or spaces between the clusters, is no longer florid, of a rose colour, but dark purpled, or black, covered over with innumerable small erysipelatous eruptions; the skin arid, stretch'd, or distended, like a piece of parchment; or a considerable tumor arises, covered over with numbers of the eruptions, re-

sembling a true antrax, or pestiferous boil. No wonder *Sydenham* called every eruption a phlegmonous tumor, since, most certainly it is so; and all the phænomena correspond, in every degree, with a tumor of that species. The eruptions in the Small Pox arise, take their course, and are subject to all the variations, several appearances and terminations, agreeable to all inflammatory tumors in general. Now all these changes and variations are purely the effects of the cause I mentioned before, the fever, inflammation, or fire.

Many Physicians not apprehending that an inflammation was the cause of several changes and appearances of the symptoms in this disease; and not discovering that such phænomena only shewed that the disease differed

differed more or less as to heat, inflammation, or fire, therefore differed not at all in nature or kind; divided the Small Pox, as it were, into different diseases: for instance, *Helvetius* distinguishes many complications of this disease; one, whilst they have a spotted fever attending; another a quinsy, or an intermittent fever, &c. Their not knowing the nature of the Small Pox, dividing it essentially into different classes, their conceiving a complication of diseases with the Small Pox, differing essentially from it, led them to a practice extremely dangerous, and often, I fear fatal: but above all they err'd most in not distinguishing the nature of the Small Pox: For although many knew this disease to be an inflammation, yet led by some hypotheses or other, they considered a pleurisy, a quinsy as

diseases differing in kind from that of the Small Pox; and this one example of their practice proves the fallacy of their theory, as well as the danger of their practice.

Let one of these physicians attend a patient in the Small Pox, complicated with an inflammation of the throat, lungs, or pleura; if the Small Pox be past the eruption, would they venture to cure that inflammation of the lungs, or pleura, by the usual means? No, they dare not; for should they bleed or purge, they imagine the morbid matter peculiar to the Small Pox, would be struck in from the circumference to the nobler parts; which is a demonstration, that they are entirely ignorant of the nature of the disease.

The

The Small Pox, in its nature then, is wholly of the inflammatory kind, and can only differ, according to the several constitutions, air and climate. Wherefore we will go on with a history of this disease, considering all the accidents and different appearances of this distemper, as the effect of a more or less degree of inflammation. In the same manner as if we were treating of a pleurisy, or common tumor, we do not say these differ in any other manner, than this: if the inflammation be very high, such a tumor will be hard to resolve; and those tumors which are hard to resolve, rather incline to mortify than suppurate kindly. Upon this foundation and no other, I shall go on to describe the Small Pox,

and

and attempt the method of cure ; I shall consider every pustule as a common inflammatory tumor, subject to all these several stages in common with such inflammations, which are all the distinctions this disease admits of.

Now we are arrived at the total eruption of the Small Pox, from henceforth we are to look upon the progress of the eruptions, and their several changes and appearances, as the most distinguishing and pathognomic signs, enabling us to preface either a fortunate or fatal event.

Let us first describe the distinct sort, where the inflammation is not high, and where the eruptions pass gradually to a proper state of maturation. As even in this, they make
their

their appearance not all at the same time, so they rise and proceed to suppuration, in the same order and succession of time: so those on the face necessarily are ripe two or three days before those on the feet. When they come to the highest state of maturation, they begin to dry; and therefore must begin to sink of course. Those on the face come to this state about the ninth or tenth day, dating the time from the first day of sickness; of course those about the feet and legs arrive not to that state till the eleventh, twelfth or thirteenth day. What then have authors hitherto meant, in fixing the turn to one certain day, when it is visible it is as long in turning, as in coming out? That period of the disease, called the *turn*, is a point of the highest importance, because it is at that time those

those who perish by the Small Pox generally die, unless it be when bloody urine is made, and then they generally die on the seventh day; but the turn of the Small Pox cannot be limited to any one day, unless they all made their appearance on the same day. Here is another circumstance which alters the turn, and makes it impossible to fix this change to a certain day, any more than they could the day of the eruption; for the eruption appears sooner or later, as the fever is more or less violent; so also, the eruptions turn sooner or later, according to the force of the inflammation,

The order and several stages, of these eruptions through which they pass, will be best understood by the following description, which will illustrate that period of the Small Pox

Pox call'd the change, a time more equivocally and uncertainly describ'd than any other stage of the disease. To do this we must describe the course of one single eruption; for it would be impossible to describe the whole at the same time, because some are just appearing, when others begin to mature; some in the highest state of maturation, while others are drying; these drying while others are scabbing and falling away.

First, they are small upon the eruption, red, watery and hard; to be felt, rather than seen; the pathognomic distinction with respect to the measles, which are an efflorescence. It grows larger, rises sharper, and spreads at the basis, making so little a progress for two or three days, that one would scarcely think it would ever come to any thing;

thing; but, on the fourth day after its first appearance, it begins to look white, is much larger, but often depressed, and flattish at the top: it grows now larger, whiter, and very much inflam'd at the bottom; the skin round it, for some distance, is extremely florid, like a red rose leaf: the matter now seems to be perfect pus, but white and thin; and this in six days from its first appearance. It is then swelled, and comes to the highest state of inflammation: the matter now begins to grow thicker and something yellower, and that in the middle of the pustule; and at last thickens into a yellowish scab; the inflammation still continuing about the basis of the eruption. And this also, takes up about three days time; and when it is thus scab'd, the pustule can be no longer in a state

state of inflammation, and of course the swelling subsides, which puts a period to the disease.

The secondary fever, that began with the maturation of the eruption, rises gradually, and is a concomitant symptom with the several stages of the pustules, as the pustules are of the fever. We are but to suppose all the eruptions, in any particular case, to resemble this I have described, and we have an idea of a distinct and kind sort.

In such a distinct sort as this, the secondary fever arising about the seventh day, the Small Pox also beginning to fill at the same time, the fever still increasing as the eruptions proceed to maturation, the fever, of consequence, will be raised to the highest degree at that time

the greatest number of eruptions, are at the highest state of maturation : so that if all the eruptions of the body were to come out at one and the same time, and all the several parts of the body were of equal heat and warmth, the pustules would then, on the ninth day, be all in the highest state of maturation; that is, they would begin all to dry at the same time; and we could then fix the turn to one certain day: but as it happens quite otherwise, we cannot fix the time of the turn to such or such a day; much less such an hour of a day, as some pretend to do. As the Small Pox even takes up two or three days in coming out on the face, so some of these begin to turn two or three days before others. Henceforth I would lay down this as a maxim; as soon as ever
any

any of the eruption begin to dry, I say the Small Pox begins to turn; that the turn continues two, three, or four days; and the height is at about a day and half after the beginning of the turn; at which time the fever ascends to its highest pitch.

From the history I have given of the distinct kind, we find ourselves no longer puzzled about fixing the time of the turn, either in this or the confluent kind, or the time of its eruption; for as the eruption takes up two or three days, so also does the turn: but the eruption, the maturation and turn, are all controuled and govern'd by the inflammation, fire, or heat peculiar to the constitution, as will be sufficiently illustrated by the history of the confluent kind.

Let us now describe the confluent sort; and by this will be shewn all the variations, degrees, and distinctions, peculiar to the Small Pox in general.

The fever, if it rises to a certain degree, produces the confluent sort. The symptoms attending this stage of maturation in that case, with respect to the eruptions and fever, resemble, in a great measure those of the distinct sort, (they begin to turn rather sooner on the face,) because the fever or inflammation was something higher; and they take up a much longer time in turning, because there are a greater number of eruptions; the symptoms are near the same, unless we except a looseness in children, and the spitting in grown people.

This

This spitting, or salivation, is the most extraordinary symptom in this disease: it begins generally with the secondary fever, nay, sometimes before the eruption be over: it is more fluid, and copious, the first two or three days, than afterwards; for as the maturation goes on, and the fever ascends, the spittle becomes thicker, more viscid, and decreases daily; but if the secondary fever be carried immensely high, the spitting then ceases, and the patient dies: when the fever of maturation becomes not higher than necessary to produce a laudable and kind suppuration, the spitting goes on to the thirteenth, fourteenth, fifteenth, and even sometimes to the twentieth day; that is, till the Small Pox is entirely dry over the whole body.

It will be necessary here to give a distinct history of three different subjects, labouring under this disease, from the coming on of the secondary fever; as also, the beginning of maturation, its progress, state, and declension.

The first shews the kind and distinct sort; the second a benign, but flux'd Pox; the third the flux'd or confluent, the most fatal; with all the several accidents and variations this disease admits of.

About the sixth day of the distemper, in the distinct sort, the secondary fever comes on; the pulse begins to quicken, and grows harder; the face grows more florid and red, the urine something higher coloured than natural, with
a cloud

a cloud suspended in the middle, or subsiding to the bottom: this night, that is, the first night of maturation, the patient is restless, and sleeps with more difficulty than at any other time in the disease; the eyes often water, or are bloodshot. The seventh or eighth day the face swells more than at any other time, the eyelids swelling first of all, and are generally blown up, shining like a bladder, and closed at this time. The pustules on the face are large, and begin to look white on the top; the interstices, that is, the skin between the pustules, seems to be extended, inflamed, of a red florid colour; and some few pustules, even now begin to dry about the nose, cheeks or forehead; the pulse still quickens and grows harder; the voice something alter'd, as if the patient had

a cold; the mind dejected, and sometimes sighs break out; the urine rather paler, and less turbid. The eruptions on the breast, which are fewer than on any other parts of the body, are as forward, very near, as those on the face; those on the arms are now very large, whitish at top, and very much inflam'd at bottom; those on the hands and feet come on but slowly, on the ninth day the face appears to be swell'd to the utmost; the eruptions are now larger, the matter extremely white, and the skin, or interstices, still more inflamed and redder, many on the face drying on this day, and some few beginning to dry on the breast; the eyelids of a darkish red; the pulse now extremely quick, and very hard; the water paler, thinner, and clearer than at any other time; those on
the

the arms very much inflam'd, and the interstices, or skin between the pustules, almost as much inflam'd as on the face; if there are many eruptions, the whole arms seem to swell; and at this time slight rigors affect the sick. On the tenth, the symptoms are much the same as on the ninth day; the pulse is high, and as quick; the water is clear, the face as much swell'd, only the eyelids begin to subside a little; many more drying on the face, and turning to a yellowish scab; sometimes the face sinks a little on this day, which, if it does, the hands begin to puff up and swell on the back. On the eleventh, the face begins to fall, especially about the cheeks and eyes, the hands swelling more; those on the hands are quite green, but full ripe, as they were on the face, on the eighth and ninth day; the

pulse now begins to become more regular, not so quick, nor hard, as on the two preceding days; the urine not so thin, or so pale, but with a cloud suspended, turbid, or with a sedement. On the twelfth the face continues sinking, drying, scabbing; the patient has, perhaps, the eyes still clos'd up, not so much from the swelling, which now seems to be gone, as the matter's gluing up the lids; as the face sinks the hands continue swell'd, the interstices between the eruptions not so florid: the skin not so much extended, nor so hard, but more pliable and soft to the touch; that is, the inflammation remits round the basis of each pustule; those on the hands are still full and white, but the matter begins to thicken, the pulse more regular, even than the day before. On the thirteenth the hands fall;

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and

and the feet, if there are many eruptions on the instep, puff up and swell, as the hands subside; at this time the eruptions on the feet are at the highest state of maturation: and as those pustules on the face, after they came to maturation, turn'd and dry'd into a yellowish scab, these upon the body, break and dry away. Upon this day they are generally turn'd all over the body, unless some few on the hands and those on the feet: so that here we may say, the distemper ends; inso-much that the secondary fever, which began about the sixth or seventh day, and continued rising gradually till the tenth, when it came to the highest pitch, and continued, as it were, so for about twenty hours, and afterwards sunk by degrees, upon the thirteenth or four-

fourteenth, vanishes entirely. As there is no more matter to be form'd now in any pustules, so all the eruptions take the same course, ending in matter, unless those at the bottoms of the feet, where the skin being thick, hard, and callous, resists the eruption of the pustules, and is the cause of their ending in yellowish or dark warts, resembling so many corns. There is this distinction to be made between children and grown people: in those the urine is more turbid, not straw-coloured, but rather white, the body not costive; in these, when the fever is highest, the water is clear, of a flame or straw colour, in both, at the declension of the disease, the urine becomes thick and turbid.

The confluent, when it is kind, differs not at all from the distinct sort,

fort, if we except the spitting, or salivation, which continues during the whole course of the secondary fever. As the fever in this confluent sort ascends from day to day, and comes to the highest about the tenth or eleventh day ; so the spitting which began with the secondary fever, every day, as the fever increases, lessens in quantity, and becomes constantly more and more viscid ; of course, as the fever on the eleventh day, is at the highest pitch, the spit-
 tle must be also, at this time, extremely viscid, and therefore hard to be brought up : if it ceases at this time, the patient generally dies. The pulse, the urine and the eruptions were the only signs by which we could form predictions in the distinct sort ; but they are not the only signs in the confluent, since the spitting, a symptom the most considerable,

rable, always attends the maturation of the pustules in the flux sort, which is over either on the thirteenth, fourteenth, or fifteenth day.

We have described the second stage of a regular and kind Small Pox; but as it will be necessary here to shew the various symptoms, we shall now give the history of this.

The eruptions, and other circumstances, of this disease, vary according to the force of the fever, the inflammation, or fire, in the constitution ; so that it is impossible for any man in the world to have the Small Pox, if some cause or other did not inflame his blood. Neither is it possible for any of these eruptions, symptoms, circumstances, or variations, during the course of the secondary fever to exist, but what
are

are natural to the distemper, and are equally essential to all phlegmonous tumours in general. Therefore all these phænomena arise, change, or fall, according to the degree of inflammation in such a particular man, at such a particular time, whether his diet be high or low; whether he is an *Egyptian* or *Indian*; let the medicines, regimen, diet, air, be whatever they will; neither will constitution sex, age, or climate, avail; the Small Pox will be always the same: it can only differ as to degree of inflammation: so that the physician who had known this might have given an history of the Small Pox, that would have taken in people of all degrees, countries, ages, sexes, and constitutions. Let us return back to the beginning of the secondary fever: In the confluent sort, of an higher degree

degree than what we have already describ'd, this fever coming on, as I shew'd before, not arising by degrees, but all at once like a storm or hurricane, although the whole body at this time labours under an inflammation; yet this inflammation, as a real fire, burns, and destroys, and acts with greater violence on some parts of the body than others. About the sixth day of the disease, the head seems to be the principal seat of the inflammation, for the patient suddenly becomes furiously light-headed, the eyes streaming with water, blood-shot, glaring; the sick have a fierce aspect; the spitting, the constant attendant on maturation in the flux soon, more copious, and more fluid in the beginning, than afterward; but if the inflammation be very high, it is even viscid at this time; a quinsy also attends,

attends, a strangury, and sometimes bloody water; which is the most fatal symptom of any in this disease, and therefore the mark of the highest inflammation; a short dry cough, with stitches, and what is spit up from the lungs, not seldom streaked with blood; for when the lungs are much inflamed, the patient also spits the matter flowing from the lungs, as in a common cold, pleurisy, or peripneumony; and the spittle varies, as cruder, or more digested or tinged with blood, agreeable to the several stages of the diseases, or from the salival glands or parts peculiar to a common salivation raised by mercury, or produced by the Small Pox. This spittle is also more or less fluid, or extremely viscid, just agreeable to the state of the inflammation. Another mark of high inflammation at this time, are
profuse

profuse sweats: if the fever is not extremely high, the patient is costive; otherwise has a looseness, the stools black and fetid; if the fever or inflammation be still higher, they are tinged with blood; or the inflammation ascending still higher, a bloody flux may be produced. The pulse, if the inflammation be tolerable, is quick, hard and full; if raised higher, it quickens more, is still hard, but not so full. If the lungs be principally inflamed, the pulse undulates; if the brain depressed, small and threading; the higher the inflammation is, the colder and paler are the external and extreme parts; and even sometimes to that degree as to produce a cold clammy sweat; the tongue and voice faltering, the lips trembling, or convulsed, as also, what physicians call *Subsultus Tendinum*. The urine
being

being of a flame colour, is a mark of high, but the crude straw colour indicates an higher degree; and that the head will be principally affected. Next to the making of bloody urine, there is no symptom more fatal than spots appearing between the eruptions of the Small Pox; the red less dangerous than the purple; and the purple less than the black: for if the patient recovers, these spots return from black to purple, from purple to red, and from red to the natural colour of the skin. Although these purples, as they are called, are marks of the highest degree of inflammation, yet if 'tis possible for any symptom to exceed these in fatality, it is when the skin upon several parts of the body, especially upon the legs and thighs, in great patches, is black and hard, as if burnt with a hot iron or lightning.

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If

If the inflammation in the flux fort, on the sixth or seventh day, be higher than it should be, the face begins to swell soon, the pulse is quicker on that day than it ought to be, and the spittle too viscid : if the inflammation be still in a higher degree at this time, the pustules, that came on and ripened slowly will now many of them be even passed maturation ; many of them scorched or burnt at top, as if seared with an iron : the skin of the forehead, arms and other parts either hard stretched, of a darkish red, and sometimes covered between the pustules ; with very small eruptions, like a rash ; or else the skin is of a palish, livid, cadaverous aspect. With these symptoms the patient may live from day to day ; that is, from the sixth to the seventh, from the seventh to the eighth and so on, always

ways in danger, but does not die till the face begins to sink; and then if it sinks suddenly, the spitting ceases, the voice alters, he grows hoarse, unable to swallow, and then dies; or should the face not swell at all, as sometimes it happens, yet he struggles through these horrid symptoms, as long as the pulse continues any thing full, and till the spitting stops; then he perishes, which generally happens about the eleventh day. If the patient survives beyond this day, as the face dries, it turns not, as in the kinder sort to yellowish scab, but a black dark crust. If the patient dies upon the tenth, twelfth, or even later, on the fifteenth, or twentieth day, a looseness, profuse sweats, or an intolerable smell, resembling a putrified carcase, precedes the fatal event, it will be proper to mention here

the disposition of the mind in the course of the disease: if the patient appears too lively, far from dejected, but speaks with alacrity, and some degree of boldness, it is a mark of the fever, and very near allied to light-headedness; on the other hand, a sighing and great dejection of mind, a sorrowful, mournful and weeping aspect, are marks of the highest degree of inflammation.

Thus have we given an history of the several stages of the Small Pox; from whence it appears there can be no change, or variations, but what flow from one cause, that is fire, inflammation of heat however produced; that there can be no diseases complicated with the Small Pox, but of the inflammatory kind; so that this disease will

will be the same in all countries, and have the like nature and symptoms in all ages, constitutions and sexes. The eruptions of the Small Pox may be not improperly compared to some particular kind of fruit; the maturation of which depending upon a certain degree of heat, will ripen gradually, very soon or not at all; it may be blighted or burnt up, according to the disposition of the climate, or soil, culture, or skill of the planter, whether it be planted, inoculated or grows spontaneously.

Thus we have endeavoured to shew the several evident causes that produce the Small Pox, or have power to raise it to an high degree, so as to render the distemper fatal to many; and if it be true that such

causes which I have mentioned, are found to have that force or power to dispose an human body to inflammation, fire, or putrefaction, the consequence of these; and, if it be certain that the Small Pox is a disease founded upon an inflammation, and one of the most eminent among the diseases of the inflammatory kind, which I am convinced it is, and of which, the history I have given is a full demonstration; it necessarily follows, that if we could evade those causes productive of inflammation, in general, we evade the Small Pox; or, should we not be able to evade those causes, could we at least find means to resist and oppose such causes; that is, prevent their usual effects; we could then controul the inflammation; and,

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consequently prevent the Small Pox.

But should the power of physic or sagacity of the physician, not always extend so far as to avert such causes, or so effectually oppose them, as entirely to destroy their effects, yet if we prevail so far as to lessen those causes productive of inflammations, or considerably lessen their effects, we should then have power to dispose the human body to a less degree of inflammation ; and of consequence to render people less subject to the Small Pox ; or should they have it, less fatal. To be able to effect this, and lay down such rules, as are certain, either to prevent people from falling into the distemper, or to controul the violence of it, and render it more supportable,

and more benign, it was necessary to collect such observations as were sufficient to prove that such particular causes would always produce, raise, and exasperate this disease ; and that it was only an inflammation, though *sui generis* : it will be now necessary to shew, what are those means that have power to avert, oppose or controul this disease ; which, if we are able to do, we are able to cure the Small Pox.

In treating of the cure of this disease, we shall first observe that whether the physician obtains his ends, by the use of medicines, choice of air, diet, exercise, repose, indulging of sleep, watching, manual operation, or some or all of these together, it matters not. For by whatever means the
phy-

physician obtains his point in view, they are just and necessary, and are all confined within the verge of his prescription. Whatever exists within the whole compass of nature that can possibly affect an human body, ought if possible by the physician to be taken notice of and observed; because every moment there may be something that offends, and therefore to be opposed. Of what extent then are physicians views? How can he be confined to one medicine, or one particular method of cure? Curing does not consist in perpetually prescribing this or that medicine, altho' they are sometimes necessary. The physician as often prescribes happily, and gains his ends, by forbidding the use of such medicines, or ordering such and such things to be avoided, which were inju-

injudiciously directed. Suppose a patient confined to his bed in a small room covered with a load of cloaths with a great fire, taking every moment strong broths or wine; his pulse becomes quick, and the man is all on fire, as well he may be: when a judicious physician comes, he orders the fire to be put out, the cloaths to be taken off, suffers him to cool by degrees, and the man is well. I mention this, because I would be rightly understood, that I am not going to lay any stress upon particular empirical medicines; for that would be quackery: I would endeavour to shew a rational comportment, a conduct to be observed by all physicians; the various methods, regimens, and medicines, to be used in all constitutions, climates, ages, and sexes: we insist rather on such rules

as direct us what not to do, than on those which shew us what to do.

But before we come to those particular precepts, concerning the curative part, it will be necessary to lay down some rules concerning the effects of medicines, as well as the motives a physician acts from in the choice of them: for unless the physician acts by motives that are rational and just, he can never judge and determine on the real virtue and force of a medicine. The present state of physic built unhappily upon the sandy foundation of *hypothesis*, and the general propensity to empiricism; that is, the use of quack medicines, requires a more exact scrutiny into the efficacy of medicines.

I have

I have hitherto confined myself, before the cure, to a bare historical account of the Small Pox, and divided the history of it into several stages, having also given my opinion concerning the nature of the disease, as well as the several maladies that are often complicated with it. From whence I imagine, it has been proved to be an inflammation *sui generis*; yet we have an opportunity to confirm and illustrate this essential point. I mean, the nature of the disease, in considering the regimen, medicines, diet, &c. which I propose; the result of which will still add a greater weight, if possible, to the doctrine I have already laid down concerning the nature of this disease in *particular*,

as well as all other inflammations in *general*. This will be then proving *a posteriori*, what I have asserted ; and I may venture to say, there cannot be a more certain method found out to discover the nature of a disease, than by observing with the greatest attention the power and efficacy, as well as various effects of medicines on human bodies ; which cannot be determined unless the state and circumstances of the sick, existing at those particular times, are duly considered, when such and such medicines were administered. The operations then of such medicines, will best shew the nature of the disease.

The descriptive part of this treatise on the Small Pox accounts,

First,

First, for the season of the year, the climates, ages, sexes, and constitutions of people, which have an influence in raising or opposing this disease.

Secondly, shews what those diseases were, which disposed men to imminent danger, when complicated with the Small Pox.

Thirdly, we described what preceded the eruption, and whatever relates to the Small Pox, during the whole course of the eruption, till that period of the disease is over.

And *Fourthly*, we examin'd the rise of the secondary fever, with the maturation of the pustules, till ripened, dryed, and fallen away, which is the last state of this distemper.

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This order then should be observed in the curative part, and such precepts proposed concerning those medicines as well as regimen and diet, that may have power sufficient to resist or mitigate, to controul, or conquer a disease hitherto in a manner irresistible.

But to obtain the end we have in view, let the means or method be whatever it will, (whether by diet, by regimen, by medicine; whether by exercise, repose, the change of air or climate, by watching or indulging sleep, or lastly, by what other means soever) provided they are found to have power to prevent, to restrain, or subdue an inflammation, they are certainly necessary : if it be true that the Small Pox is nothing but one of the species

cies of inflammations, of consequence, all such methods and means are absolutely necessary to be put in execution. But we are forced by necessity to prove what those things are that raise an inflammation, as also, what those things are which produce contrary effects; or we prove nothing certain to our point; and there is nothing so uncertain in phyfic as the knowledge of the real effect produced by the almost infinite number of medicines of late years introduced among us, concerning which there are many things very confidently and falsely asserted.

Boerhaave himself laments this deplorable branch of our art, and is even unwilling himself to give particular receipts when he treats of diseases. And well he might,
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for the effects of medicines rather arise and take their force from the judgment of a physician in their just application than from any constant virtues inherent in themselves. An example will illustrate this, and confound all the empirics can say in support of the constant and universal effects of quack medicines.

The effects of medicine may be compared to the effects of fire, and these vary according to the qualities of those bodies to which it is applied: if fire be applied to gum powdered, an immediate explosion is produced; if to dry wood, it burns with rapidity; if to wet suddenly and slowly; if applied to snow, the fire itself is extinguish'd. So medicine acts variously, as it happens to be applied to bodies

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of different qualities: And therefore the Effects of medicine vary according to the judgment of the physician in the application.

A Dispensatory tells you, that opium will put a man to sleep;---that an infusion of aloes, with brandy, or what is call'd *hicra picra*, will purge---that *Mercurius Dulcis* will abate the inflammation of all,---and that broom ashes will promote Urine---that the bark is an astringent.---It is true these medicines are sometimes found to have such effects; but that is when they are applied in some particular cases, in some particular constitutions, in some particular diseases; nay these effects are frequently limited even to some particular stages of a disease; let but such cases, such constitutions, such stages of

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a disease vary; and behold the effects confidently attributed to these medicines vanish in a moment, and quite contrary and unexpected effects arise.

For example, half a grain or a grain of *opium*, given to a man upon his coming out of a tepid bath, having been cupped or bled, the body not costive, will plunge that man into a most profound sleep; but where the body is costive, the constitution adust, inflammatory or the body heated with exercise in a hot summer's day, in such a case the same quantity of *opium* will be found to have a quite contrary effect; the person, instead of being drowsy and inclined to sleep, vigilates and becomes delirious for want of sleep.

Aloes infused in wine or brandy, purges easily a person of a cold flatulent constitution, where there is no inflammation: But such whose blood is much heated or inflamed, who are costive and whose urine is high coloured, this medicine will not purge at all; and the oftener it is repeated, the more it would act as an astringent, the more obstinately costive would the body be rendered, and to such a degree, that should the injudicious physician persist in the administration of this medicine, the person must certainly perish from an inflammation of the bowels, before it will be found to produce the effect of purging.

The *bark* taken after the hot fit of an ague is spent, is an astringent; but given during the hot or sweat-

sweating fit, it generally purges ; when it binds, it prevents the return of the distemper ; when it purges, it has no such effect.

A wound growing foul, and obstinate to heal, requires the administration of some medicine, in order to lower the inflammation and bring it to digest : if you bleed such a man, and give him fifteen or twenty grains of *Mercurius Dulcis*, after having purged him with *Glauber Salts*, and *Cheltenham* or *Acton* waters, the regimen being then low and cooling (if there be not an high inflammation in his blood, and great costiveness proceeding) the mercury will be found to abate the inflammation of such a wound, and make it digest kindly with good matter : but, should mercury be given where

there is a great inflammation in the blood, the body very much bound, and the person exposed to the cold air, or shut up in a hot room, it will then have a quite contrary effect, and be found to add not only a new degree of inflammation to the wound, but may also inflame the bowels, stomach, the throat, or mouth, and even to such a degree as if those parts were burnt with fire. I have frequently observed the throat ulcerated deeply, and that in a very little time, from mercury being injudiciously given, and this pernicious effect of that dangerous medicine not being known, has been the occasion of many being expos'd to the repetition of mercury, even to salivation, judging the case to be venereal. An infusion of *broom ashes* in wine, administered to a dropfical

dropfical woman of a cold phlegmatic constitution, no fever attending, will generally promote urine to a great degree, that is, (in the apothecaries language) it will act as a good diuretic, but given in a dropfy, where the liver, or any other part of the bowels is ulcerated, tabid or highly inflamed, (in which case there must exist a concomitant fever, and the blood must be in an inflammatory state,) this medicine, will then have no such effect, it will not act as a diuretic but quite the reverse; the urine will be made in less quantities than before, it will become higher colour'd one day than another, in proportion as the fever rises, which it certainly will from the heating quality of this alkaline medicine; and if this course of medicine be

persisted in, the urine will grow as red almost as blood, the fever will continue to rise, and at last to that degree, that a mortification may ensue. This I think sufficiently proves, that the effect and power of medicines vary according to the variation of the subject, upon which they act; and as subject or body admits of infinite variations, so do medicines. Who is there then that can discover how far their virtues may extend? we can only determine their powers and efficacy in some particular cases, at such particular times, and in such particular constitutions. The more we consider physic in this light, the more we still recede from empiricism; for rational physic and empiricism are as inconsistent

sistent as common sense and reason are with enthusiasm.

We shall now proceed to point out a method of cure: but the means, or instruments necessary to effect this end, must be proved to have such force and efficacy as to avert, restrain, or conquer, an inflammation, since the accidents and changes incident to the Small Pox depend upon, and are the necessary consequence of an inflammation; and at the same time that we prove such medicines, regimen diet, &c. to have such virtues, being apply'd at such particular times, and in such particular circumstances of the disease, we shall also demonstrate what those medicines, regimen and diet are, that act upon an human body so as to create, raise, and

and exasperate an inflammatory disease.

This a physician ought to know; because it is as necessary to the cure of the patient, what to forbid him the use of as what to prescribe, for that physician often happily directs who only prohibits the use of such, and such things, and prescribes nothing.

First then, in order to prevent the Small Pox, cou'd we find out something that hath power to destroy the cause exciting this species of an inflammation of the blood, we prevent the Small Pox. Or, could we find out the means to prevent the usual violent effects flowing from such a cause, we then resist that cause.

Altho' the cause be not totally destroyed, nevertheless the effects produced by that cause can never arise to any degree of danger: if so, we equally obtain our ends. We observe the waters of a smooth and tranquil sea soon arise, and swell and roll from a sudden storm of wind; were it in the power of any to stay that storm of wind the sea would be calm, and not agitated: or, suppose there were some means to add a vast weight to those waters, superior to the force or storm of wind; that sea would be still and calm, and notwithstanding the winds were uncontrollable, yet they would blow without effect, and have no more power over the waters, than if they blew over a dry barren piece of land. Causes exciting the Small Pox are infinite:

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Some are evident, but many more unknown to us as yet; yet whatever they are, they must first produce an inflammation in the blood before this disease can appear, since all mankind in this distemper have their blood inflam'd before the fourth day.

Tho' many of the causes which produce the Small Pox may be unknown; yet could we propose such means as have power to prevent the body's being subject to an inflammation, we could then resist those hidden causes productive of the Small Pox, by averting their usual effects. Hence then we have indications sufficient for our conduct in avoiding this distemper, the diet should be cooling, diluting and subacid, &c. In short every method must be tried that can lower and impoverish the blood :

blood: Or, (were it possible to give a disease) even to promote a true intermittent fever, or any distemper of a contrary nature from that of the Small Pox; for two diseases, differing essentially in kind, cannot exist at one and the same time. A person who would avoid the Small Pox, ought to choose such air, or climate where inflammatory diseases are less frequent, (for I believe there is not a climate wholly exempt) especially such places should be avoided, where inflammatory diseases are epidemic, and at that time stationary. A man would be most likely at such times, and in such places, to be subject to the Small Pox, and that constitution of air productive of the plague, spotted fever, or whatever other fever of the inflammatory kind, at that time epidemic,

whether in a camp, a besieged town in the hot months of *June*, *July*, and *August*, will add so much fever or inflammation to the Small Pox, as probably to render it fatal. Neither will it be sufficient to avoid violent exercise, an high regimen, strong spirituous liquors, even the mind must not be agitated with passions or depress'd by too reclusa a life, intense thought, application to business or hard study; the constitution is even to be lowered from that of a vigorous state of health: For a florid healthy state is very nearly allied to what we may call the first degree of inflammation. A man who would avoid the Small Pox, should betake himself to a low and more cooling Regimen in his diet than usual; the liquor small, diluting and of the acid kind; repletion prevented

prevented by bleeding and cooling
 phyfic; the mind kept in a pro-
 found repose; gentle exercise: by
 these means the constitution will be
 reduced, as I would have it, ra-
 ther to the state of a convalescent
 than one in a high state of health.
 The cold bath in this part of the
 world, hath been esteemed of late
 years, by physicians of eminence
 as a powerful means to prevent
 the returns of inflammatory dis-
 eases: therefore it must be of
 force to oppose in some degree
 the coming on of this disease, since
 it is of the inflammatory kind;
 even a high state of health is
 thought too near a State of inflam-
 mation to receive the Small Pox,
 either by *inoculation* or *infection*,
 with how much attention, then
 ought we to examine whether a
 patient, who would avoid the Small
 Pox,

Pox, or have it in a favourable manner, is not already affected with some inflammatory disease, and if there should be any such disease, it is instantly if possible to be cured, lest the Small Pox should come on, and affect the patient with a complication of diseases which would be, (in such a case) as so many fires multiplied by one another.

There are a thousand medicines, that will raise an inflammation in the blood ; and certainly, there are likewise medicines and means powerful enough (if not to prevent at least) to restrain or lower an inflammation : and therefore it is in our power to prevent many from falling into this disease ; and even those that do (by observing proper rules and methods,) will seldom

feldom be exposed to danger, the disease not ascending to any degree of malignity.

In diseases, such as the Plague, Small Pox or Spotted Fever, it is not sufficient to begin to oppose the disease when once it is grown powerful; we are if possible, to prepare the body in such manner as to prevent its Rage: for these diseases in some particular climates and seasons of the year and constitutions strike instantaneously like lightning; consume and burn with such rapidity that the body is wounded, and frequently destroyed even on the first attack. Whoever then stays till the disease has gained force generally comes too late, it is with us often as it is with those at sea; a good sailor from diligent observation can by certain signs foretell an approaching storm. He lies
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by ; furls his sails, and prepares himself for the reception of it, which might otherwise in an instant shatter and tear his vessel to pieces. The means I propose, in order to prevent the Small Pox, or, at least, prepare the body, so that the disease may be more gentle and benign, may seem not to be very extraordinary, particularly to those who have great confidence in the pomp of medicine.

Could we once persuade mankind to believe that the virtues of medicines depend chiefly on the judgment of the physician, they would think otherwise. What, can living lower than usual, changing of air, a little blood taken away, or some gentle physic, avail ; can such common means as these, they cry, have such powerful effects? Those who

are well acquainted with phyſic know, that they have, for theſe powers and virtues depend upon the particular circumſtances of time, &c. There is nothing more eaſy than to prove this, ſuppoſe the ſagacity of a phyſician extended ſo far as to know, that ſuch a man, would in ten minutes fall down in an apoplexy from a fullneſs of blood, might not the loſs of only eight or ten ounces of blood from the arm, or the feet preſerve that man. That after the veſſels of the brain have given way are lacerated and broke with a profuſion of blood, the bleeding to fifty ounces would have no effect. What if a man were ſeized with a ſhortneſs of breath, a ſuffocation, with an unuſual heat in the cheſt, the cheeks being more than uſually florid, ſigns marking a diſtention of the

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lungs,

lungs, from too great a fullness of blood, at this time a person being ignorant of the state he is in, finds himself dispirited, oppress'd, drinks a glass of strong wine or brandy, or a glass of water, with perhaps forty or fifty drops of spirit of hartshorn, or of some other such fiery medicine: upon this he vomits blood, is some time hence seized with a cold shivering fit like an ague, he spits matter, and at last dies of a consumption: had a physician in such a case directed only a glass of water, or had he abstained from every thing that could heat or inflame his blood, it is not impossible but that nature alone, unopposed by medicine ill applied, having only the disease at that time to struggle with, might have freed herself, by some critical effort. It is then the timing and the appli-

application of the medicines, or the means we have proposed, that gives the force and efficacy; bleeding a few ounces, a cordial, a few drops of hartshorn, a fire in a sick man's room may be said to be of no great consequence; and there are such circumstances of a disease, such times and such occasions when they are not of any great moment, nay, of no effect; but there are also times, when such things may absolutely kill, or absolutely cure.

We are every moment to consider nature, and the disease, opposing each other as weights in a scale: we are to add to her side, if too impotent, that she may preponderate; and there are such times when the least weight is of the greatest moment, and will turn the scale. Even a cypher in arithmetick placed

placed among figures, affects those figures just according to the position of that cypher; the value still rising or decreasing according as it is placed: so do medicines, diet, exercise, regimen, &c.

The just application of this to every particular case of this disease, will be no difficult task for the skillful physician, but to regulate the conduct of those who, without being sufficiently qualified, are hardy enough to undertake the cure of this critical distemper, it may be necessary to illustrate the foregoing doctrine by cases, and point out the particular method of cure in every variation of this distemper, and which is intended to be the subject of a future enquiry.

F I N I S.

E R R A T U M.

Page 9. instead of *Solomon Negri*, read *Dr. Hunt*.

